**Abstract**

The current invention relates to the synthesis of novel cationic lipids and their use as delivery vectors for nucleic acids, peptides and other synthetic drugs, *in vitro* and *in vivo*. The cationic lipids described herein form stable lamellar structures (liposomes) at physiological pH but destabilize to micelles at acidic and alkaline pH. These structures are characterized of high elasticity, increased fluidity and high transfection activity relative to the corresponding 1,2-dialkyl cationic derivatives and other phospholipids analogues.